

Contributors

David Bell received his B.S.E.E. from Cornell University in 1980 and M.S.E.E. from Stanford University in 1981. Mr. Bell joined the Jet Propulsion Laboratory (JPL) in 1981, working on deep-space and commercial satellite applications research and development. He currently is the Supervisor of the Communications Systems Engineering and Operations Group. Outside of JPL, Mr. Bell has taught satellite courses at the University of California, Los Angeles (UCLA), and with Pete Conrad has developed and started Universal Spacenet, a commercial satellite telemetry, tracking, and control (TT&C) service provider.

Ann Devereaux received her B.S. in Computer Engineering from the Massachusetts Institute of Technology (MIT) in 1989 and her M.S. in Communications Engineering from the University of Southern California (USC) in 1994. She has worked at JPL since 1989 in communications systems for spacecraft and deep-space ground elements as well as for commercial and military applications. She is the Supervisor of the Proximity Radios Group, which develops relay link radios and generic instrument interface and data processors for space flight use.

Dariusz Divsalar received his Ph.D. in Electrical Engineering from UCLA in 1978. Since then, he has been with JPL, where he is a Principal Scientist. During the past 20 years, he has taught graduate courses at UCLA and Caltech. He has published over 150 papers, coauthored 3 books, and holds 10 United States (U.S.) patents. Recently, one of his papers was selected as one of the key research papers published by the Institute of Electrical and Electronics Engineers (IEEE) Communications Society during the past five decades. He has received over 25 National Aeronautics and Space Administration (NASA)

Tech Brief awards and a NASA Exceptional Engineering Achievement Medal. Dr. Divsalar is a Fellow of IEEE.

Sam Dolinar received his Ph.D. in Electrical Engineering from MIT in 1976, where his master's and doctoral theses were on optical communications. He worked at MIT Lincoln Laboratory before joining JPL in 1980. Dr. Dolinar has focused his research on channel coding and source coding for the deep-space channel, especially turbo codes and low-density parity-check codes during the past decade. He teaches data compression at Caltech.

Todd Ely received his Ph.D. in Astronautical Engineering from Purdue University in 1996. Prior to joining JPL in 1999, he was an officer in the U.S. Air Force and a Visiting Assistant Professor at Purdue University. Dr. Ely is currently a Senior Engineer in the Guidance, Navigation, and Control Section, where he is the Mars Network Navigation Lead, supporting navigation system trades for Mars and radio navigation technology development.

Edwin Grigorian received his B.S.E.E. in 1985 and his M.S.E.E. in 1989, both from the University of Alabama in Huntsville, and is currently pursuing his Ph.D. in Electrical Engineering at USC. Mr. Grigorian has been at JPL since 1990, where he is a senior member of the engineering staff developing analog/digital integrated circuits. Some of his recent work has included the design and integration of multi-watt fully integrated complementary metal oxide semiconductor (CMOS) power amplifiers and drivers for an L-band radar transmitter/receiver (T/R) module, design of field programmable gate array (FPGA) and low-power application-specific integrated circuit (ASIC)-based digital radios for ultra-high frequency (UHF) proximity links, and digital design of a neural prosthetic implant mixed-signal ASIC.

Jon Hamkins received his B.S. from the California Institute of Technology (Caltech) in 1990 and Ph.D. from the University of Illinois at Urbana-Champaign in 1996, both in Electrical Engineering. Dr. Hamkins has been at JPL since 1996, where he is the technical supervisor of the Information Processing Group, which performs research in autonomous radios, optical communications, information theory, channel coding, data compression, and synchronization.

Thomas Jedrey received his B.S. in Mathematics from the University of Maryland, College Park, Maryland, in 1979. He received his M.A. in Probability and Statistics from the University of Maryland in 1982 and his M.S. in Electrical Engineering from USC in 1990. He worked at the U.S. Army Harry Diamond Laboratories and at Gould Electronic Systems before joining JPL in 1986. He led the successful development of the Electra Proximity Radio,

and he is now the Deputy Manager of the Flight Communications Systems Section at JPL.

Igor Kuperman received his B.S. from California State Polytechnic University, Pomona, in 2001 and his M.S. from USC in 2005, both in Electrical Engineering. Mr. Kuperman has been at JPL since 2000, where he is a member of the engineering staff in the Communications Architectures and Research Section. Some of his recent work includes software and firmware design for digital UHF proximity radios and implementation of coding and data compression algorithms.

Alan Lee received his B.S. from the University of California, Berkeley, in 1988, M.S.E.E. from UCLA in 1990, and E.E.E. from USC in 1997. Mr. Lee has been at JPL since 1999, where he is the Supervisor of the Electronics Design Group for the Flight System Avionics Section.

Edgar Satorius received his Ph.D. in Electrical Engineering from Caltech in 1975, where his doctoral thesis was on electromagnetic propagation through non-linear plasmas. He worked at the Naval Ocean Systems Center, Dynatech, and Gould Electronic Systems before joining JPL in 1986. Dr. Satorius has focused his research on adaptive signal processing and communication and has several innovations in data equalization and direction finding during the past decade. He teaches digital signal processing at USC.

Hooman Shirani-Mehr received his B.S. from Sharif University of Technology, Tehran, Iran, in 2001 and M.S. from USC in 2006, both in Electrical Engineering. He currently is a Ph.D. student in Electrical Engineering at USC. His research interests are in communications and information theory.

Marvin Simon received his Ph.D. in Electrical Engineering from New York University in 1966. He was employed at the Bell Telephone Laboratories from 1966 to 1968. Since 1968 he has been with JPL, where he is currently a Principal Scientist. During this time period, he has performed digital communications research as applied to the design of NASA deep-space and near-Earth missions, with particular emphasis in the disciplines of synchronization, trellis coding, spread spectrum, and modulation and demodulation techniques. In the past, Dr. Simon also held a joint appointment in the Electrical Engineering Department at Caltech. Dr. Simon has published over 170 papers and authored and co-authored 12 books.

Andre Tkacenko received his B.S., M.S., and Ph.D. degrees in Electrical Engineering from Caltech in 1999, 2001, and 2004, respectively. Dr. Tkacenko has been at JPL since 2005, where he is a Research Engineer for the Digital Signal Processing Group. His primary fields of research include multirate systems theory, digital communications, and atmospheric modeling for antenna arrays.